

CLAIMS

What is claimed is:

1. A system for transmitting a communication burst from a first communicating unit to a second communicating unit; the system comprising:

at said first communicating unit:

a cyclic redundancy check (CRC) generator for receiving data and generating a CRC;

a first combiner for combining said CRC with an identification of the second communicating unit to generate a mask; and

a transmitter for transmitting the burst comprising said mask and said data; and

at said second communicating unit:

a memory for storing the identification of the second communicating unit;

a receiver for receiving said communication burst including said mask and said data;

a second combiner for combining said mask with said stored identification to recover the CRC; and

means for determining whether said recovered CRC is valid.

2. The system of claim 1, wherein said first and second combiners are modulo-2 adders.

3. A system for transmitting a communication burst from a first communicating unit to at least a second communicating unit; the second communicating unit being associated with an identification number; the system comprising:

at said first communicating unit:

a cyclic redundancy check (CRC) generator for receiving data and generating a CRC;

a combiner for combining said CRC with the identification number to generate a mask; and

a transmitter for transmitting a communication burst comprising said mask and said data; and

at said second communicating unit:

a memory for storing said identification number;

a receiver for receiving said communication burst including said mask and said data;

a combiner for combining said mask with said stored identification number to recover the CRC;

means for determining whether said recovered CRC is valid.

4. The system of claim 3, further including at least a third communication unit, whereby said third communication unit is also associated with said identification number.

5. The system of claim 3, further including a plurality of communication units, wherein only a portion of said plurality of communication units is associated with said identification number.

6. A system for transmitting a communication burst from a first communicating unit to a second communicating unit; said second communicating unit being associated with an identified number; the system comprising:

at said first communicating unit:

a cyclic redundancy check (CRC) generator for receiving data and generating a CRC, the CRC generator being initialized with said identification number; and

a transmitter for transmitting a communication burst comprising said CRC and said data; and

at said second communicating unit:

a receiver for receiving said communication burst including said CRC and said data; and

means for determining whether said recovered CRC is valid.

7. The system of claim 6, further including a plurality of communicating units, wherein only a portion of said plurality of communicating units is associated with said identification number.

8. A system for transmitting a communication burst from a first communicating unit to a second communicating unit; the second unit being associated with an identification; the system comprising:

at said first communicating unit:

a combiner for receiving data and combining the data with an identification field including said identification to generate a mask;

a cyclic redundancy check (CRC) generator for receiving the mask and generating a CRC; and

a transmitter for transmitting a communication burst comprising said CRC and said data; and

at said second communicating unit:

a receiver for receiving said communication burst including said CRC and said data; and

means for determining whether said recovered CRC is valid.

9. The system of claim 8, wherein said data comprises a data block and wherein said identification field includes both said identification and a plurality of additional bits such that the length of the identification field is the same as the length of the data block.

10. The system of claim 9, wherein at least a portion of said additional bits includes said identification.

11. A method for transmitting a data burst from a first unit to a second unit comprising:

at said first unit:

receiving data for transmission;

generating a cyclic redundancy check (CRC) based upon said data;

combining the CRC with an identification of the second unit to generate a mask;

appending the mask onto the data to form a data burst; and

transmitting the data burst; and

at said second unit:

receiving said data burst;

retrieving the identification of the second unit from memory; and

combining the retrieved identification with said mask to generate said CRC;

and

determining whether said CRC is valid.

12. In a wireless digital communications system in which messages are transmitted from a node B to a user equipment (UE) wherein the system utilizes code-division multiple access (CDMA) technology for transmission and reception of the messages, the method comprising the steps of:

- (a) at said node B, performing a cyclic redundancy check on a message;
- (b) overlaying the cyclic redundancy check with a UE identity and transmitting the message and the overlaid UE identity and cyclic redundancy check to the UE;
- (c) said UE, receiving the message with the overlaid UE identity and cyclic redundancy check;
- (d) extracting the UE identity from the message received at step (c); and
- (e) comparing the extracted identity with the identity of the UE receiving the message at step (c).

13. The method of claim 12 further comprising said UE extracting the message if, and only if, the comparison at step (e) indicates a match.

14. The method of claim 12 further comprising said UE ignoring the message if there is no match at step (e).

15. The method of claim 12 wherein performing the cyclic redundancy check at step (a) further includes performing a mathematical calculation on the data of the message for generating a binary number that uniquely identifies the data.

16. The method of claim 12 wherein the step (a) further comprises performing polynomial arithmetic modulo two addition on at least a portion of the message to obtain a check sum which is the cyclic redundancy check.

17. The method of claim 12 wherein step (b) further comprises combining the cyclic redundancy check generated at step (a) with the identity of the UE employing modulo two addition.

18. The method of claim 12 wherein step (b) further comprises padding out a field of the UE identity with zeros to make the field of the UE identity equal to a field of the CRC.

19. In a wireless digital communications system in which messages are transmitted from a network to a user equipment (UE) wherein the system utilizes code-division multiple access (CDMA) technology for transmission and reception of the messages, the method comprising the steps of:

(a) at said network, performing a cyclic redundancy check on a message;
(b) overlaying the cyclic redundancy check with a UE identity and transmitting the message and the overlaid UE identity and cyclic redundancy check to the UE;

(c) said UE, receiving the message with the overlaid UE identity and cyclic redundancy check; and

comparing the cyclic redundancy check at the UE combined with the identification code of the UE with the CRC and overlaid UE ID received from said network.

20. A wireless digital communications system employing code-division multiple access technology comprising a network and at least one user equipment (UE);

(a) said network including a cyclic redundancy check (CRC) generator performing a CRC on a message to be transmitted to a given UE;

(b) means for overlaying the CRC with an identity code of the UE intended to receive the message;

(c) means for transmitting the message and overlaid UE identity and CRC to the intended UE;

(d) said intended UE including a receiver for receiving the transmission and coupling the received transmission to a CRC extractor; and

(e) said CRC extractor for extracting said higher layer message when the received UE identity extracted from the received message compares with a locally provided UE identity of said intended UE.

21. The system of claim 20 further comprising said CRC extractor ignoring the message when the comparison of step (e) fails.

22. A wireless digital communications system employing code-division multiple access technology including a network and at least one user equipment (UE); the system comprising:

(a) said network performing a cyclic redundancy check on a message to be transmitted to a given UE;

(b) said network including means for overlaying the CRC with an identity code of the UE intended to receive the message;

(c) said network including means for transmitting the message and overlaid UE identity and CRC to the intended UE;

(d) said intended UE including means for receiving the transmission; and

(e) a data extractor for extracting said message when the received UE identity extracted from the received message compares with a locally provided UE identity of said intended UE.

23. The system of claim 22 further comprising said UE processing the message when the comparison matches.

24. A wireless digital communications system employing code-division multiple access technology comprising a station and at least one user equipment (UE);

said station including:

a cyclic redundancy check generator for performing a cyclic redundancy check on at least a portion of a message to be transmitted to a given UE;

means for overlaying the CRC with an identity code of the UE intended to receive the message; and

a transmitter for transmitting the message and overlaid UE identity and CRC to the intended UE; and

said intended UE including:

a receiver for receiving the transmission from the station;

means for extracting the UE identity from the received messages and comparing it with a locally stored UE identity; and

means for extracting said message only when there is a match between the extracted UE identity and the stored UE identity.

25. The system of claim 24 wherein said intended UE further includes means UE for verifying the UE identity.

26. A method for identifying one or more user equipments (UES) each having a unique identification (ID) among a plurality of UEs comprising;

receiving a data packet;

generating a cyclic redundancy check (CRC) based upon said data packet;

module 2 adding said CRC to the UID to create a mask; and

appending said mask onto said data packet for transmission.